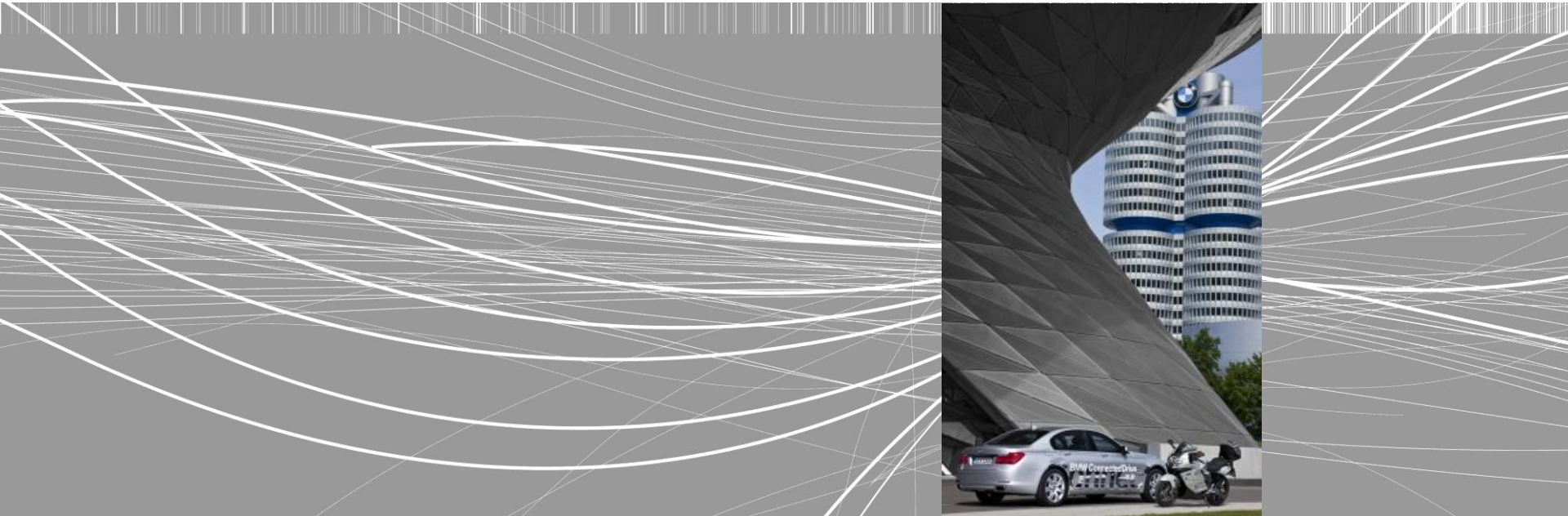


BMW Forschung u. Technik GmbH.

25th Anniversary of a Think Tank.



Car2x-Communication.

BMW Group



Car2x-Communication.

Contents.

Car2x-Projects.

Technology.

Traffic light assistant.

Intersection assistant.

Emergency vehicle warning.

Bad weather warning.

Braking manoeuvre information.

Obstacle warning.

Car2x-Communication.

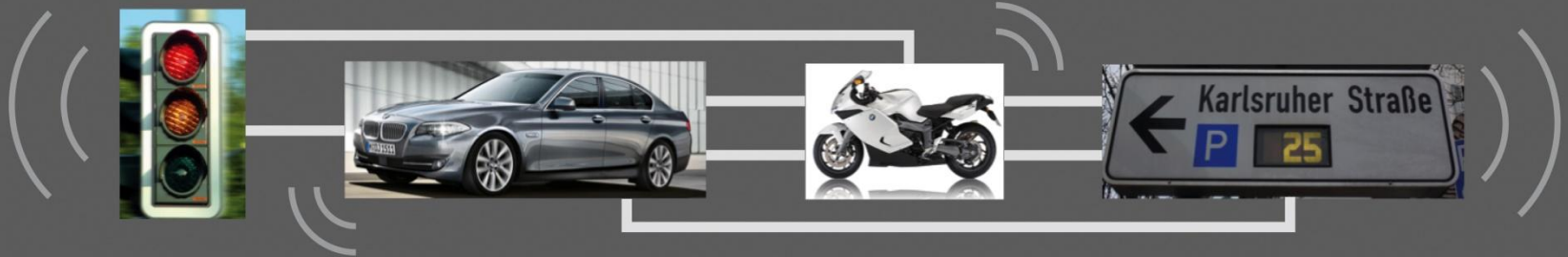
BMW Group is partner in a number of different projects.



INTERSAFE2



Car2x-Communication. Technology.



Acts as a further sensor enabling applications to both increase safety and comfort.

Secure information exchange (e.g. position, velocity, ...)

Range: 200 ~ 400m

Car2x-Communication.

Traffic light assistant.



Car2x-Communication.

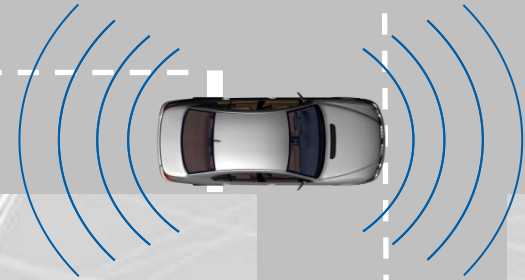
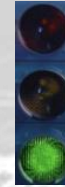
Traffic light assistant. Individual green sequence of traffic lights.

Intersection scenario with traffic light

vehicle would reach the intersection at red keeping the current speed

driver accelerates to suggested velocity

vehicle hits a green light



Car2x-Communication.

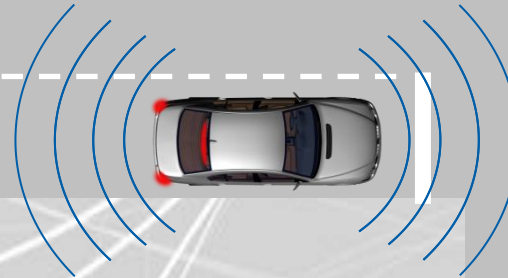
Traffic light assistant. Red light information.

Intersection scenario with traffic light

vehicle would reach the intersection at red keeping the current speed

due to traffic conditions acceleration is not possible

after the information the driver brakes in time



Car2x-Communication. Intersection assistant.



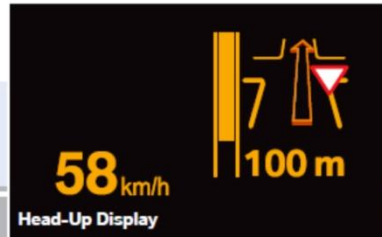
Car2x-Communication.

Intersection assistant.

Time horizon

1. approaching phase

information about
– traffic regulation
– navigation path



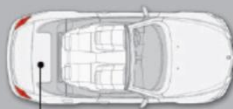
2. hazard situation

potential yielding
disregard leads to a
warning



3. driver reaction

deceleration of vehicle
to stop in front of the
stop line



car on give way
(crossing) path

motorcycle:
enhancement of
conspicuity by activating
indicator and horn



Motorcycle on
right of way path



Car2x-Communication.

Hazard warnings.



Car2x-Communication.

Emergency vehicle warning.

Urban area with line-of-sight obstruction

right of way but information
via car2car



emergency vehicle can pass



high building
(line-of-sight obstruction)

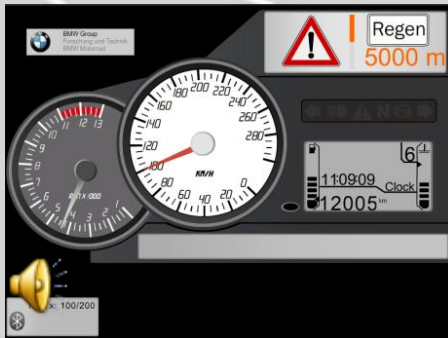
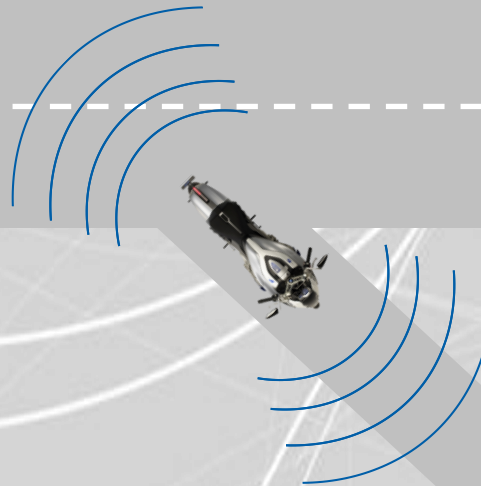
Car2x-Communication.

Bad weather warning.

trip in the mountains
is intended

driver gets the
information that there is
rainy weather on his
route

driver can choose an
alternative route



Car2x-Communication.

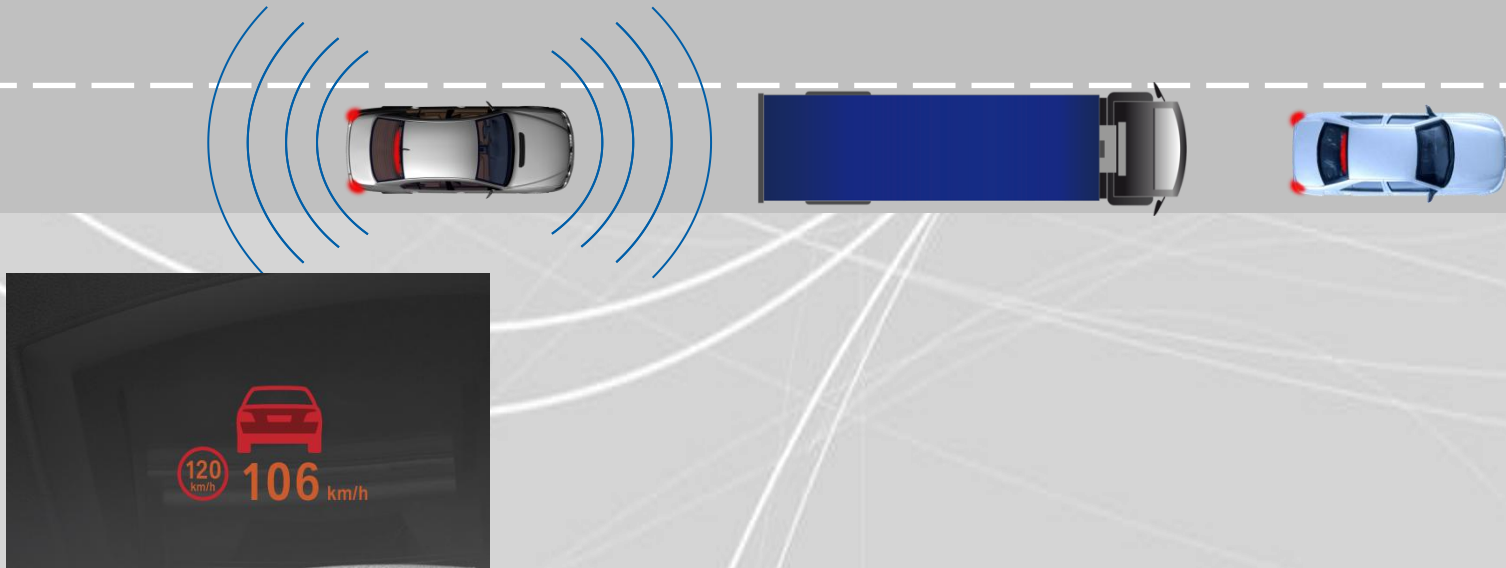
Braking manoeuvre information.

Bumper-to-bumper traffic incl. a truck (line-of-sight obstruction)

sudden braking
manoeuvre of the first
vehicle in line

truck driver can see the
braking lights but
conceals the braking car
to the following vehicle

via c2c communication also
the following vehicle gets the
information in the Head-Up
Display



Car2x-Communication.

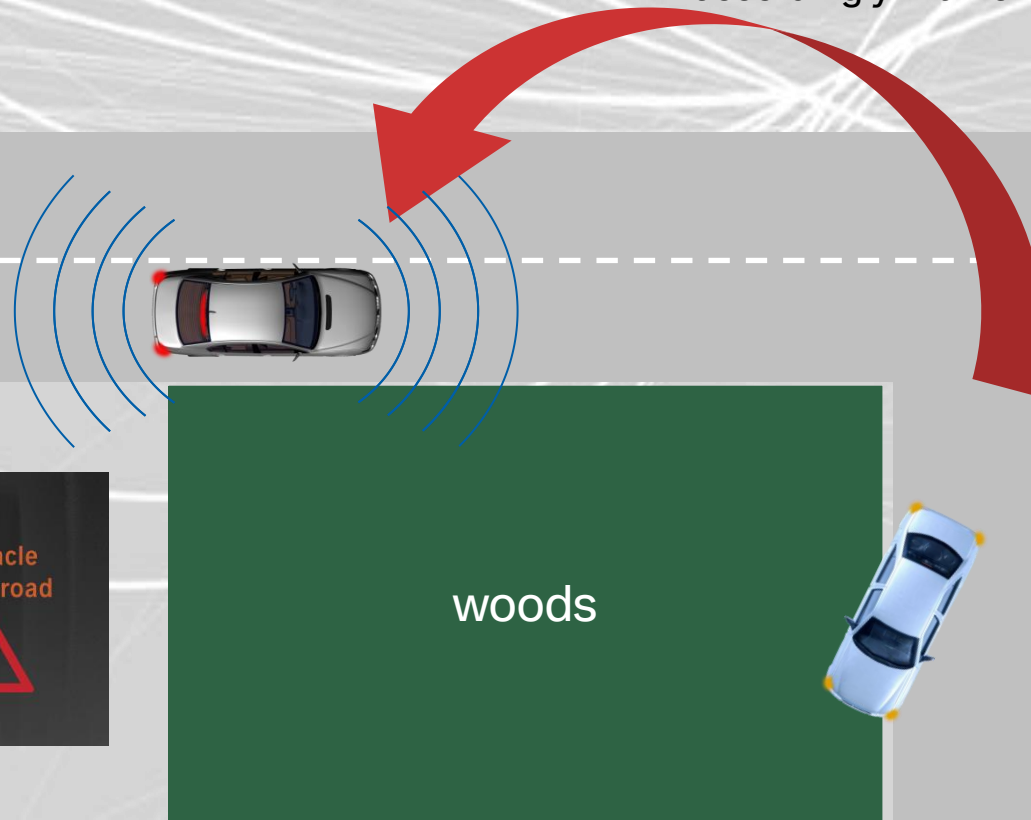
Obstacle warning.

Driving through the woods with limited view of the route

a vehicle had a break down in a corner

its position is sent via c2c communication.

the upcoming traffic will be informed about the potential hazard and can react accordingly in time



Car2x-Communication.

Thank you for your attention.

